

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A method of creating a generic text summary of a document; said method comprising:
 - obtaining the document;
 - creating a weighted document term-frequency vector for said document;
 - for each sentence in said document, creating a weighted sentence term-frequency vector;
 - computing a score for each said weighted sentence term-frequency vector in accordance with relevance to said weighted document term-frequency vector;
 - selecting a sentence for inclusion in said generic text summary in accordance with said computing, wherein the selected sentence has the computed score representing high degree of relevance of the corresponding weighted sentence term-frequency vector to said weighted document term-frequency vector; [[and]]
 - deleting said selected sentence from said document and eliminating terms in said selected sentence from said document; and
 - generating the generic text summary based on the selected sentence.
2. (previously presented): The method of claim 1 further comprising:

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

recreating said weighted document term-frequency vector in accordance with said deleting and said eliminating; and

selectively repeating said computing, said selecting, said deleting, said eliminating, and said recreating.

3. (original): The method of claim 2 wherein said selectively repeating is terminated when a predetermined number of sentences has been selected.

4. (original): The method of claim 1 wherein said computing comprises calculating an inner product of said weighted sentence term-frequency vector and said weighted document term-frequency vector.

5. (original): The method of claim 1 wherein said creating a weighted sentence term-frequency vector comprises implementing a local weighting function and implementing a global weighting function.

6. (original): The method of claim 5 wherein said creating a weighted sentence term-frequency vector comprises normalizing each said weighted sentence term-frequency vector.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

7. (original): The method of claim 1 wherein said creating a weighted document term-frequency vector comprises implementing a local weighting function and implementing a global weighting function.

8. (original): The method of claim 7 wherein said creating a weighted document term-frequency vector comprises normalizing said weighted document term-frequency vector.

9. (currently amended): A system for creating a generic text summary of a document; said system comprising:

a computer comprising at least a CPU and a memory;

an interface for obtaining the document;

a display for displaying said generic text summary; and

summarizer program code, operable on said computer, for analyzing and summarizing said document; said summarizer program code comprising:

a vector generator for creating a weighted document term-frequency vector for said document and creating a weighted sentence term-frequency vector for each sentence in said document;

a scoring engine for computing a score for each said weighted sentence term-frequency vector in accordance with relevance to said weighted document term-frequency vector;

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

a selector for selecting a sentence for inclusion in said generic text summary in accordance with output results from said scoring engine; [[and]]

a document editor for deleting said selected sentence from said document and for eliminating terms in said selected sentence from said document; and

a generic summary generator for generating the generic text summary based on the selected sentence.

10. (previously presented): The system of claim 9 wherein said vector generator recreates said weighted document term-frequency vector in accordance with output results from said document editor.

11. (original): The system of claim 10 wherein said summarizer further comprises a loop routine for generating iterative sequential operations of said vector generator, said scoring engine, said selector, and said document editor.

12. (original): The system of claim 11 wherein said loop routine is responsive to a predetermined limit such that said generic text summary is of a predetermined number of sentences.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

13. (currently amended): A method of creating a generic text summary of a document; said method comprising:

- obtaining the document;
- decomposing said document into individual sentences;
- forming a candidate sentence set from said individual sentences;
- for each of said individual sentences in said candidate sentence set, creating a weighted sentence term-frequency vector;
- creating a weighted document term-frequency vector for said document;
- for each of said individual sentences in said candidate sentence set, computing a relevance score for said weighted sentence term-frequency vector relative to said weighted document term-frequency vector;
- selecting a sentence for inclusion in said generic text summary in accordance with said computing, wherein the selected sentence has the computed relevance score representing a high degree of relevance of the corresponding weighted sentence term-frequency vector to said weighted document term-frequency vector;
- deleting said selected sentence from said candidate sentence set;
- eliminating terms in said selected sentence from said document; [[and]]
- recreating said weighted document term-frequency vector in accordance with said deleting and said eliminating; and
- generating the generic text summary based on the selected sentence.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

14. (original): The method of claim 13 further comprising:
selectively repeating said computing, said selecting, said deleting, said eliminating, and
said recreating.
15. (original): The method of claim 14 wherein said selectively repeating is
terminated when a predetermined number of sentences has been selected.
16. (original): The method of claim 13 wherein said computing comprises calculating
an inner product of said weighted sentence term-frequency vector and said weighted document
term-frequency vector.
17. (original): The method of claim 13 wherein said creating a weighted sentence
term-frequency vector comprises implementing a local weighting function and implementing a
global weighting function.
18. (original): The method of claim 17 wherein said creating a weighted sentence
term-frequency vector comprises normalizing each said weighted sentence term-frequency
vector.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

19. (original): The method of claim 13 wherein said creating a weighted document term-frequency vector comprises implementing a local weighting function and implementing a global weighting function.

20. (original): The method of claim 19 wherein said creating a weighted document term-frequency vector comprises normalizing said weighted document term-frequency vector.

21. (currently amended): A method of creating a generic text summary of a document; said method comprising:

obtaining the document;

constructing a terms-by-sentences matrix for said document;

performing singular value decomposition on said terms-by-sentences matrix to obtain a singular value matrix and a right singular vector matrix, wherein each sentence in said document is represented by a column vector of a transpose of said right singular vector matrix;

ranking each right singular vector in said right singular vector matrix; [[and]]

selecting a sentence for inclusion in said generic text summary in accordance with said ranking; and

generating the generic text summary based on the selected sentence.

22. (original): The method of claim 21 further comprising repeating said selecting.

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

23. (original): The method of claim 22 wherein said repeating is terminated when a predetermined number of sentences has been selected.

24. (original): The method of claim 21 wherein said selecting further comprises identifying a sentence having a desired index value with said right singular vector.

25. (original): The method of claim 21 wherein said constructing comprises implementing a local weighting function and implementing a global weighting function.

26. (currently amended): A system for creating a generic text summary of a document; said system comprising:

a computer comprising at least a CPU and a memory;

a display for displaying said generic text summary; and

summarizer program code, operable on said computer, for analyzing and summarizing said document; said summarizer program code comprising:

a matrix generator for creating a terms-by-sentences matrix for said document;

an SVD performer for performing singular value decomposition on said terms-by-sentences matrix to generate a singular value matrix and a right singular vector matrix;

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

a vector analyzer for ranking each sentence in said terms-by-sentences matrix in accordance with index values with said right singular vector matrix; and

a selector for selecting a sentence for inclusion in said generic text summary in accordance with output results from said vector analyzer; and

a generic summary generator for generating the generic text summary based on the selected sentence.

27. (original): The system of claim 26 wherein said summarizer program further comprises a loop routine for generating iterative operation of said selector.

28. (original): The system of claim 27 wherein said loop routine is responsive to a predetermined limit such that said generic text summary is of a predetermined number of sentences.

29. (currently amended): A method of creating a generic text summary of a document; said method comprising:

obtaining the document;

decomposing said document into individual sentences;

forming a candidate sentence set from said individual sentences;

constructing a terms-by-sentences matrix for said document;

AMENDMENT UNDER 37 C.F.R. § 1.116
U.S. Application No. 09/817,591

performing singular value decomposition on said terms-by-sentences matrix to obtain a singular value matrix and a right singular vector matrix, wherein each sentence in said candidate sentence set is represented by a column vector of a transpose of said right singular vector matrix;

identifying a right singular vector from said right singular vector matrix;

selecting a sentence for inclusion in said generic text summary in accordance with said identifying; [[and]]

selectively repeating said identifying and said selecting; and

generating the generic text summary based on the selected sentence.

30. (original): The method of claim 29 wherein said selectively repeating is terminated when a predetermined number of sentences has been selected.

31. (original): The method of claim 29 wherein said selecting further includes identifying a sentence in said candidate sentence set having a desired index value with said right singular vector.

32. (original): The method of claim 29 wherein said constructing comprises implementing a local weighting function and implementing a global weighting function.